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10/525,550

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EXAMINER

BOMAR, THOMAS S

ART UNIT

PAPER NUMBER

3672

MAIL DATE

DELIVERY MODE

08/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,550

Applicant(s)

SMITH, DAVID R.

Examiner

Shane Bomar

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-86 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/24/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 15, 34, 49, 52, 68, 75, 85, and 86 are objected to because of the following informalities:
 - a. claim 1, line 3, the recitation of “a wellbore” should be --the wellbore--;
 - b. claim 15, line 4, the recitation of “the static receiver” lacks proper antecedent basis since only a receiver was previously claimed;
 - c. claim 15, line 5, the claim does not end with the required period;
 - d. claim 34, line 2, the recitation of “a wellbore” should be --the wellbore--;
 - e. claim 49, the recitation of “the converter” lacks proper antecedent basis;
 - f. claim 52, the recitation of “the conduit” lacks proper antecedent basis;
 - g. claim 68, line 5, the recitation of “same time an optical” should be --same time as an optical--;
 - h. claim 75, the recitation of “a second downhole tool” lacks proper antecedent basis because a first downhole tool has not been claimed in claim 68; and
 - i. claims 85 and 86, it is unclear if the recitation of “a physical parameter” in claim 85 is in addition to the physical parameter of claim 82, and the recitation of “the another physical parameter” lacks proper antecedent basis in claim 86.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 11, 13, 15-22, 24-26, 30-39, 42, 44, 46-51, 53-55, 59-62, 64-70, and 72-76 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,898,517 to Weis.

Regarding claims 1-6, 11, 25, 26, 30-32, 34-39, 42, 54, 55, 60-62, 64-70, and 72-75, Weis discloses systems and methods for logging a wellbore comprising: a logging tool 440 including at least one down hole power supply to power the logging tool (power is supplied from the fiber optic line itself, which is substantially downhole; col. 18, lines 4-7) and adapted to be deployed in a wellbore on a continuous conduit 450; the logging tool adapted to send data from the wellbore; a fiber optic line 415 in optical communication with the logging tool; and the logging tool transmitting the data on a real time basis through the fiber optic line (Fig. 7; col. 18, lines 13-52). The conduit also transmits an applied pressure downhole through the conduit to operate the downhole motor while optical signals are traveling through the fiber optic line to operate the sensors (see aforementioned portion of description).

Regarding claims 13 and 44, the logging tool is deployed downhole on a continuous conduit from a reel that is capable of coiling and uncoiling the conduit with a winch, thereby deploying the logging tool multiple times in the same wellbore (col. 18, lines 30-35).

Regarding claims 15-17, 46, and 47, Weis further discloses an optical slip ring 436 functionally associated with the reel and the fiber optic line; a receiver attached to the fiber optic line at the surface; the optical slip ring adapted to allow the transmission of optic data to the static receiver 64 while the conduit and fiber optic line therein move on the reel in and out of the wellbore; wherein the fiber optic line is optically connected to a receiver adapted to receive the data; and wherein the receiver processes the data to be made available to an operator (Fig. 7; col. 18, line 62 through col. 19, line 18).

Regarding claims 18-22 and 48-51, Weis further discloses a downhole converter converts the data into optical signals to be transmitted through the fiber optic line, wherein a transmitter is located at a surface of the wellbore; a modulator is located downhole; the transmitter transmits an optical signal to the modulator; and the modulator modulates the optical signal so that the return optical signal is etched with the data (col. 6, line 42 through col. 8, line 24).

Regarding claims 24 and 53, the fiber optic line acts as a distributed temperature sensor (col. 8, lines 40-53).

Regarding claims 33 and 59, analysis of Figure 7 shows that there are multiple sensors 412 in the logging tool, which would require the end of the fiber optic line 415 be split into a plurality of fibers to be attached to each sensor.

Regarding claim 76, Weis discloses a method of transmitting optical signals through a fiber optic line, comprising: deploying the fiber optic line 415 in a subterranean wellbore; transmitting an optical signal representing data through the fiber optic line to the surface; and simultaneously transmitting another optical signal through the fiber optic line for activating a downhole tool such as the Bragg grating (Fig. 7; claim 1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 23 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weis.

Weis teaches the fiber optic line installed in the conduit of claims 1 and 34 from above, although it is not explicitly taught that the line is installed by way of fluid drag once the conduit is deployed in the wellbore.

However, the Applicant admits in paragraph 0016 of the present disclosure that installing fiber optic line by fluid drag was already known to exist in the prior art. Therefore, all of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

6. Claims 7-10, 40, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weis in view of US 5,244,046 to Council et al.

Weis teaches the conduit of claims 4 and 37 that is deployed through surface casing 452 through what one of ordinary skill would see as a stuffing box (Fig. 7), nevertheless, Weis does not expressly teach that one additional seal is located below the stuffing box for the conduit to pass through.

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Council et al teach a continuous conduit similar to that of Weis that is delivered downhole from a reel (Fig. 1 and col. 5, lines 44-52). It is further taught that the conduit sealingly passes through stuffing box 90 and then through BOP 28 below the stuffing box (Fig. 8 and col. 9, line 62 through col. 10, line 18). Therefore, all of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

7. Claims 12, 14, 43, 45, 77-79, and 82-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weis in view of US 2003/0070806 to Connell et al.

Regarding claims 12 and 43, Weis teaches the conduit that is deployed from a reel in claims 11 and 42, although it is not specifically taught that the reel is located on a vehicle.

Connell et al teach a continuous conduit 26 on a reel 50 similar to that of Weis that is used to deliver a logging tool 28 downhole (Fig. 1; paragraph 0049). It is further taught that the reel is located on a vehicle, which will provide mobility to the system (Fig. 1). Therefore, all of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Regarding claims 14 and 45, the combination applied to claims 12 and 43 above further teaches that the logging tool is deployed and retrieved from multiple wellbores due to the mobility of being on a vehicle. This rationale can analogously be applied to claims 77 and 82 to provide the missing limitation of deploying and retrieving the tool from a plurality of wellbores.

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Regarding claims 78, 79, 83, and 84, temperature is measured long the length of the line (col. 8, lines 40-53 of Weis).

8. Claims 27-29, 56-58, 63, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weis in view of US 5,704,426 to Rytlewski et al.

Weis teaches the systems and methods of claims 25, 54, 61, and 69 that include a continuous conduit deployed in a wellbore that transmits a pressure signal through the conduit. However, it is not expressly taught that the pressure signal is a pressure pulse for activating a packer and/or a perforating gun.

Rytlewski et al teach a continuous conduit deployed in a wellbore similar to that of Weis. It is further taught that a pressure pulse is sent through the conduit to first activate packer 30, which thereby allows the activation of the gun 34 (Fig. 2 and col. 6, lines 34-48). Therefore, all of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

9. Claims 80, 81, 85, and 86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weis in view of Connell et al as applied to claims 77 and 82 above, and further in view of US 7,036,610 to Vail.

The combination applied to claims 77 and 82 teaches a continuous conduit with a fiber optic line disposed therein, although it is not explicitly taught that a battery powered memory tool is attached to the conduit to measure another physical parameter, such as pressure.

Vail teaches a continuous conduit extending within a wellbore similar to that of the combination. It is further taught that there is a battery powered memory tool for sensing pressure that can be attached to any coiled tubing, or continuous conduit (Fig. 8; list of Smart Shuttle Features in cols. 43 and 44, parts c, d, m, n, r, and s). Therefore, all of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Conclusion

10. The prior art made of record on form 892 and not relied upon is considered pertinent to applicant's disclosure.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (In USA or Canada) or 571-272-1000.

/Shane Bomar/
Patent Examiner
Art Unit 3672

August 9, 2007